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DT Patent  
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PI JP 07225388 A2 19950822  
AI JP 1994-17098 A 19940214  
PRAI JP 1994-17098 A 19940214

L2 ANSWER 3 OF 3 JAPIO COPYRIGHT 2003 JPO  
AN 1995-225388 JAPIO  
TI ACTIVE MATRIX TYPE LIQUID CRYSTAL DISPLAY DEVICE  
IN OE MASATO; KONDO KATSUMI; OHARA SHUICHI; OTA MASUYUKI  
PA HITACHI LTD  
PI JP 07225388 A 19950822 Heisei  
AI JP 1994-17098 (JP06017098 Heisei) 19940214  
PRAI JP 1994-17098 19940214

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1995  
AB PURPOSE: To shorten the response time of liquid crystals in a transverse electric field system by setting the gap between substrates facing each other within a specific distance and specifying the properties of liquid crystals and oriented films.

CONSTITUTION: Wire-shaped electrodes 3, 4 are formed on the inner side of a pair of transparent-substrates 1, 1. The orientation control films 6 are disposed thereon and a liquid crystal compsn. is packed between both. The gap between the opposite substrates 1 and 1 is set at  $\leq 6\mu\text{m}$ , by which the response time of  $\leq 1100\text{ms}$  is attained. Further, a relation  $(\epsilon_{\text{LC}})_{\text{LC}} > 2\epsilon_{\text{AF}}$  or  $(\epsilon_{\text{LC}})_{\text{LC}} > 2\epsilon_{\text{AF}}$  is satisfied between the specific dielectric constant  $(\epsilon_{\text{LC}})_{\text{LC}}$ : the specific dielectric constant of the major axis direction of the molecule,  $(\epsilon_{\text{LC}})_{\text{LC}}$ : the specific dielectric constant in the minor axis direction of the molecule) and the specific dielectric constant EAF of the orientation control layer and a relation  $\eta/K < 2 \times 10^{-4} [\text{G} \cdot \text{s} / (\text{m} \cdot \text{m})]$  is satisfied between the viscosity  $\eta$ ; and elastic constant K2 of twists of the liquid crystal compsn. layer, by which the electric field liquid crystal display device of high-speed response is obtd.

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L2 ANSWER 1 OF 3 WPIX (C) 2003 THOMSON DERWENT  
 AN 1995-276755 [37] WPIX  
 DNN N1995-211653 DNC C1995-125464  
 TI High-speed response liq. crystal display - allowing use of mouse as pointing device or motion picture resolution in horizontal field method..  
 DC E19 L03 P81 U11 U14 V07  
 IN KONDO, K; OHARA, S; OHE, M; OTA, M; OE, A  
 PA (HITA) HITACHI LTD; (HITA) HITACHI SEISAKUSHO KK  
 CYC 8  
 PI EP 667555 A1 19950816 (199537)\* EN 15p  
 R: DE FR GB  
 JP 07225388 A 19950822 (199542) 9p <--  
 CA 2142397 A 19950815 (199545)  
 TW 290654 A 19961111 (199711)  
 CN 1115040 A 19960117 (199740)  
 US 5910271 A 19990608 (199930)  
 CN 1271866 A 20001101 (200112)  
 EP 667555 B1 20020828 (200264) EN  
 R: DE FR GB  
 DE 69527864 E 20021002 (200273)  
 ADT EP 667555 A1 EP 1995-200479 19950213; JP 07225388 A JP 1994-17098 19940214; CA 2142397 A CA 1995-2142397 19950213; TW 290654 A TW 1995-100493 19950120; CN 1115040 A CN 1995-102728 19950214; US 5910271 A Cont of US 1995-388506 19950214, US 1996-697014 19960816; CN 1271866 A Div ex CN 1995-102728 19950214, CN 1999-122889 19950214; EP 667555 B1 EP 1995-200479 19950213; DE 69527864 E DE 1995-627864 19950213, EP 1995-200479 19950213  
 FDT DE 69527864 E Based on EP 667555  
 PRAI JP 1994-17098 19940214  
 AB EP 667555 A UPAB: 19950921  
 A liq. crystal display (LCD) comprises a pair of substrates (1), at least one of which is transparent, enclosing an LC composite layer; an orientation control layer (6); electrodes (3, 4) mainly parallel to and lying on substrates (1); a polariser (2); and a drive, and is such that (i) gap (d) between substrates (1) is 6 microns or less; and (ii) response time is 1-100 ins.; and/or (iii) (ELC)// is greater than EAF or (ELC)/ is greater than 2EAF; and (iv) M/k2 is less than 4.5 multiplied by 1010[s.s-2]. (ELC) = dielectric constant of LC composite layer longitudinal and transverse resp.); EAF = dielectric constant of orientation layer (6); M = viscosity of LC composite layer; and K2 = a twist elasticity constant.  
 ADVANTAGE - An active matrix type LCD is provided which has a sufficiently high-speed response to allow use of a mouse as a pointing device or to enable motion picture resolution in a horizontal field method.  
 Dwg.1a/7

L2 ANSWER 2 OF 3 INPADOC COPYRIGHT 2003 EPO

LEVEL 1

AN 86737109 INPADOC  
 TI ACTIVE MATRIX TYPE LIQUID CRYSTAL DISPLAY DEVICE  
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 INS OE MASATO; KONDO KATSUMI; OHARA SHUICHI; OTA MASUYUKI  
 PA HITACHI LTD  
 PAS HITACHI LTD  
 TL English